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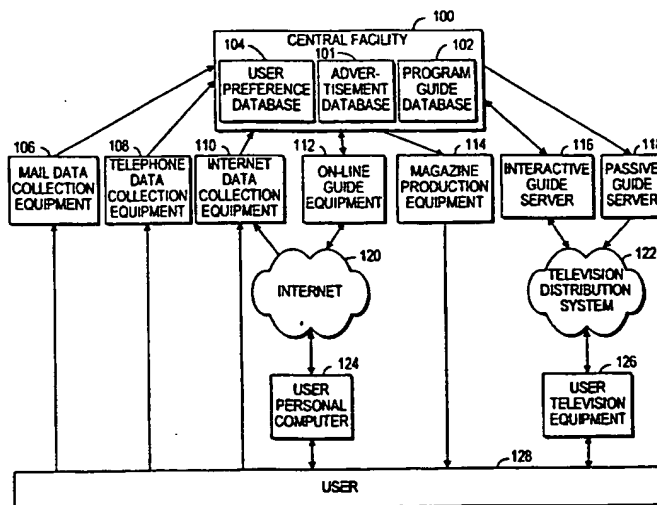
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(54) Title: SYSTEM FOR PROVIDING PERSONALIZED PROGRAM GUIDE DATA AND TARGETED ADVERTISING TO A USER OF MULTIPLE PROGRAM GUIDES



(57) Abstract: A system for providing personalized program guide data and targeted advertising to an Internet user, a user of user television equipment, or a magazine subscriber is provided. The system provides a first communications system for accepting user preferences data relating to e.g. the user's favorite Television programs, channels, actors, categories of programs, etc. The system stores user preference data from multiple users in a user preference database. The system compares the user preference data with program guide data (e.g. program listings, articles, advertisements, reviews, etc.) to develop personalized user program guide data and advertisements which are transmitted back to the user through a second communications system different from the first communications system.

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SYSTEM FOR PROVIDING PERSONALIZED PROGRAM GUIDE DATA  
AND TARGETED ADVERTISING TO A USER OF MULTIPLE PROGRAM  
GUIDES

5 Background of the Invention

This invention relates to television program guides. More specifically, this invention relates to accepting user preferences or settings with a first program guide product and using those preferences or  
10 settings with a second program guide product.

There are several different types of television program guides including magazines and other printed program guides, passive television program guide channels, on-line television program guides, and  
15 interactive television program guides.

Magazine program guides such as TV Guide Magazine provide television program listings that include date, time, and channel information for television programs as well as program descriptions.  
20 Program guide magazines include articles, on television programs, actors, channels, and categories of television programs. Program guide magazines may

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contain advertising targeted to people generally interested in television programming.

On-line program guides such as the program guide located on the Internet at [www.tvguide.com](http://www.tvguide.com) provide Internet users with program guide listings, articles, advertisements, and other program-related items of interest to television viewers.

Passive television program guide channels use automatically scrolling channel-ordered program listing grids (or other lists), video programs, and advertisements to indicate which programs are airing on a variety of television channels.

Interactive television program guides implemented on set-top boxes allow users to view television program listings on their television sets. Such interactive program guides allow users to view television program listings in different display formats and to perform various other functions. For example, an interactive television program guide may allow a user to display a channel-ordered grid of current program listings. The user may then scroll through the listings grid using a remote control. A channel-ordered grid may also contain advertisements. An interactive television program guide may also allow a user to search for programs in a desired programming category such as sports, movies, news, or the like. Some interactive program guides may be used to order pay-per-view programming.

However, there has generally been no way for a person who uses multiple types of program guides to conveniently establish preferences or adjust settings in one guide environment and have those preferences or settings used in another guide environment. It is therefore an object of the present invention to provide

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users with a way in which to submit information on television program preferences and the like with one television program guide product and to have that information used to personalize another television  
5 program guide product.

#### Summary of the Invention

This and other objects of the invention are accomplished with the principles of the present invention by providing systems and methods that allow a  
10 user of a program guide linked to one communications system to indicate his program-related preferences in that communications system and have customized program guide information based on those preferences transmitted to him through a program guide linked to  
15 another communications system. This allows a user's preferences to be shared by multiple program guide products operating in several different environments, so that each program guide product need not be individually customized. The present invention allows  
20 targeted advertising to be directed to the user through a program guide product without requiring the user to specify his program-related preferences directly to that particular guide. This may be advantageous if a particular program guide does not support two-way  
25 communications.

Preferences and settings entered by a user through one program guide system may be used by another program guide system to provide customized information back to the user. The customized information may  
30 include program guide data such as highlights of the user's favorite programs that are airing that week on television. The customized information may also include targeted advertising. Users include

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subscribers of program guide magazines and other printed program guides, users of on-line program guides, users of passive program guides, users of interactive television program guides, and users of any  
5 other suitable program guide product.

One illustrative arrangement in accordance with the invention involves users who set preferences with an on-line program guide and who receive a correspondingly customized printed program guide.

10 For example, an Internet program guide web page may allow a user to set program reminders or specify favorite programs, categories, actors, channels, etc. These settings and preferences may be used in a printed program guide system. The printed  
15 program guide system may create custom labels or custom magazine pages for a program guide magazine that highlight significant television programs, articles, interviews, and other items of interest for the user. The printed program guide system may also create labels  
20 or pages that contain advertising specifically targeted to the user.

If desired, the user's settings and preferences from an on-line guide may be used to personalize the user's interactive television program  
25 guide. For example, a reminder may be displayed by the interactive television program guide based on the settings in the on-line guide. The television program guide listings and advertisements displayed by the interactive television program guide may also be  
30 customized to match the user's on-line preferences.

If desired, an interactive television program guide may allow a user of a user television equipment device to enter television program preference data and settings that are transmitted to an interactive program

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guide server. These preference data and settings may then be used in another program guide communications system such as a printed program guide system, or an on-line program guide system.

5           A user may also specify preferences and settings using a telephone, through e-mail, or through postal mail, to a data collection service. Preferences and settings specified with one of these techniques may be used by a passive program guide, an interactive  
10 television program guide, an on-line program guide, or a printed program guide magazine. For example, user preferences may be collected from multiple users of a passive program guide and used to customize the passive program guide.

15           Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

#### Brief Description of the Drawings

20           FIG. 1 is a schematic diagram of a system for transmitting personalized program guide information and targeted advertising across a number of different program guide platforms in accordance with the present invention.

25           FIG. 2 is an illustrative screen that may be used for entering user preference information in accordance with the present invention.

          FIG. 3 is a schematic diagram example of an illustrative data structure containing user identity  
30 and television program preference data that may be stored in a user preference database in accordance with the present invention.

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FIG. 4 is a depiction of an illustrative custom program guide magazine label containing personalized program guide information in accordance with the present invention.

5           FIG. 5 is a depiction of an illustrative custom e-mail message containing personalized program guide information in accordance with the present invention.

10           FIG. 6 is a depiction of an illustrative custom program guide magazine page containing personalized program guide information in accordance with the present invention.

15           FIG. 7 is an illustrative personalized program guide web page in accordance with the present invention.

FIG. 8 is an illustrative personalized interactive television program guide display screen in accordance with the present invention.

20           FIG. 9 is a flow chart showing steps involved in providing personalized program guide information to the user in accordance with the present invention.

FIG. 10 is a flow chart showing the steps involved in providing targeted advertising to the user in accordance with the present invention.

25   Detailed Description of the Preferred Embodiments

FIG. 1 illustrates an architecture that may be used to implement the cross-platform program guide system of the present invention. Central facility 100 may include program guide database 102, which provides  
30 information about television programming such as television program guide listings data, pay-per-view ordering information, etc. The television guide program listings data may include program times,



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channels, titles, descriptions, etc. Central facility 100 may also include user preference database 104, which includes user preference data from multiple users. User preference data includes information  
5 regarding what television programs, channels, categories of programs, actors, etc. specific users are interested in. Central facility 100 may also have advertisement database 101 for storing advertisements. The advertisements may be targeted toward particular  
10 users. For example, advertisements may be targeted toward those users who are interested in a particular type of television programming. If desired, advertisements related to television programming may be stored in program guide database 102.

15 FIG. 1 illustrates several methods of providing program guide information and advertisements to users and several methods of collecting user preferences to store in user preference database 104. With one approach, a user's preference information may  
20 be collected from a user personal computer 124 using Internet data collection equipment 110 or on-line guide equipment 112 through the Internet 120. Internet data collection equipment 110 may be a communications system such as a system based on an e-mail server that  
25 transmits e-mail messages. On-line guide equipment 112 may be a two-way Internet communications system such as a server that supports interactive web pages for an on-line television program guide.

An example of a screen that may be used to  
30 collect information with Internet Data Collection equipment 110 or on-line guide equipment 112 is shown in FIG. 2. Screen 200 may be an interactive Internet web page or customized e-mail message template that the user can fill out to indicate his identity and to

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specify his preferences such as his television program preferences. Screens such as screen 200 may be provided as an interactive television display screen, a mail-in survey included in the program guide magazine, or a telephone survey form.

The user may enter his name in region 202 and may enter a unique identifier in region 204. The identifier may be an e-mail address, a magazine subscriber identifier (ID) number (obtained, e.g., by the user off of the program guide magazine address label), a set-top box ID, an address identifying the user of an interactive program guide on a user television equipment device, the user's telephone number, cable system account number, or other suitable information uniquely identifying the user. The user may enter the identity of any products that he subscribes to in region 206, such as a program guide magazine, a Television cable service with program guide access, or an interactive television program guide service on a user television equipment device. If desired, the user may be provided with a drop-down list or other selectable options that assist the user in filling out regions such as region 206 and the other regions.

The user may enter his address in region 208. The address may be a mailing address, a residential address, an e-mail address, an interactive television program guide message or e-mail address, etc. The address may be used for several purposes. For example, the address may be used to identify the user or to help identify the user. It may also correspond to the location where the program guide magazine is mailed. The address may be analyzed to obtain demographic information that is useful for targeted advertising

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directed toward the user. The demographic information may involve geographic preference information, household income level information, etc.

The user may set a reminder for himself to  
5 watch a particular television program by entering the  
program name in region 210 of interface 200. Reminders  
and user favorites can also be set on other screens  
such as a grid or list or otherwise entered by the  
user. The reminder may be transmitted back to the user  
10 in a variety of ways. For example, the reminder may be  
sent as an e-mail message to the user, or as a message  
to the user's set-top box through an interactive  
program guide. The reminder may also be sent to the  
user through postal mail as part of a customized label  
15 or page in a program guide magazine or other printed  
program guide (along with other information discussed  
further below). The user may enter his favorite  
categories of programs in regions 212, favorite actors  
in regions 214, favorite channels in regions 216, and  
20 favorite programs in regions 218. In addition, screen  
200 may provide the user with the opportunity to  
specify which other products shall be cross referenced  
with his preference information. The user may cross  
reference his preference data with a program guide  
25 magazine (or other printed publications) by checking  
region 220, a television equipment (e.g. set-top box)  
program guide by checking region 222, or an on-line  
program guide by checking region 224. The user may  
decline all cross referencing features by checking  
30 region 226.

After the user enters his preference  
information using screen 200, he may transmit this  
information through the Internet 120 to Internet data  
collection equipment 110 or on-line program guide

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equipment 112. Internet data collection equipment and on-line program guide equipment 112 may save these selections, along with the identity of the user. Internet data collection equipment 110 and on-line  
5 program guide equipment 112 may collect user preference data and settings from multiple Internet users. The user preference data and settings for certain specified users (e.g., magazine subscribers, users of certain  
10 interactive television program guide services, or on-line program guide users) may be transmitted to central facility 100 and stored in user preference database 104. The system may determine which users have  
15 subscribed to other program guide products by comparing each user's identifier or other information with a predetermined list. For example, the on-line program guide may allow the user to enter an ID code from a mailing label in region 204 that corresponds to the  
20 user's program guide magazine subscription ID. The system may use that information to confirm that the user subscribes to the program guide magazine.

A screen such as screen 200 may be used by an interactive television program guide to provide the user of an interactive guide with an opportunity to enter preferences, identifier information, and the  
25 like. Such an interactive television program guide may be implemented on user television equipment 126 of  
FIG. 1. User television equipment 126 may include a television set, a video-cassette recorder, a set-top box, a high definition television receiver, a remote  
30 control, etc. User television equipment 126 may receive television programming from television distribution system 122. Television distribution system 122 may be a cable system including a cable headend, a satellite distribution system, or a

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broadcast television system. Television distribution system 122 may be used to transmit data such as television program guide information received from program guide database 102 at interactive guide server 5 116 or passive guide server 118 to user television equipment device 126. If television distribution system 122 is based on a broadcast television system, a return communications path such as a telephone line, Internet link, or other suitable path may be provided 10 between system 122 and equipment 126. Only one user television equipment 126 device is shown in FIG. 1 to avoid over-complicating the drawings. In general, however, television distribution system 122 distributes television programming and information to multiple user 15 television equipment devices 126.

Interactive guide server 116 may send data to and receive data from user television equipment device 126 via television distribution system 122 or other routes (e.g., through a telephone line or Internet 20 connection). Interactive guide server 116 may transmit program guide data to user television equipment 126 continuously (in real-time), periodically, upon request (using a client-server arrangement), or using any combination of these approaches. In a client server 25 architecture, user television equipment 126 (which may be based upon a set-top box) may send data or requests to interactive guide server 116 for processing. Interactive guide server 116 may store data and send the results of a request back to user television 30 equipment 126 for further processing, display, or storage. Data may be transmitted from user television equipment 126 to interactive guide server 116 in real time or periodically.

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Data may be distributed between user television equipment 126 and interactive guide server 116 (both ways) on out-of-band channels in television distribution system 122 using out-of-band modulators.

5 Multiple television and audio channels (analog, digital, or both analog and digital) may be provided to user television equipment 126 via television distribution system 122. If television distribution system 122 includes a number of traditional analog

10 television channels, one or more of these channels may be used to support a number of digital channels. The bandwidth of each analog channel that is used to support digital channels may support ten or more of such digital channels. Two-way digital channels

15 require more bandwidth than one-way digital channels. Such two-way digital channels may support two-way data transfer between user television equipment 126 and interactive guide server 116. If desired, dedicated digital or analog channels in television distribution

20 system 122 may be used for the transmission of data between interactive guide server 116 and user television equipment 126. Such dedicated channels may be separate from the channels used for transmitting television program broadcast signals to the user

25 television equipment.

User television equipment 126 may display screen 200 as a television program guide display screen upon prompting by the user. After the user has entered his preference information using screen 200, the user

30 may transmit the preference information through television distribution system 122 to interactive guide server 116. Television distribution system 122 supports two-way communications between user television equipment 126 and interactive guide server 116 but

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typically does not support two-way communications with passive guide server 118, because the passive program guide product does not support direct user interactivity. Central facility 100 may access user

5 preference data stored on interactive guide server 116, Internet data collection equipment 110, or on-line program guide equipment 112 for storage at user preference database 104 and processing at central facility 100.

10 Still other communications systems may allow the collection of user preferences and program guide settings. For example, telephone data collection system 108 may be used to telephone magazine or passive guide subscribers to gather their preference data. A  
15 telephone number at telephone data collection equipment 108 that users may call to submit their preference data may be published in a program guide magazine or other printed program guide associated with magazine production equipment 114. An operator at system 108  
20 may collect settings and preference information over the telephone and may enter them into a computer system. Similarly, preferences may be collected via mail data collection equipment 106, which may be a mail-in survey published, for example, in the program  
25 guide magazine associated with equipment 114. Mail data collection equipment 106 may collect electronic mail or postal mail. An e-mail or postal address where users can send their preference data may be published in the program guide magazine or displayed by the  
30 passive guide. If desired, user preferences gathered by telephone or mail may be transferred to a computer system (e.g. user preference database 104) at central facility 100.

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User preference database 104 may be used to organize each user's identification and preference information by user name and unique identifier as shown by the exemplary data structure illustrated in FIG. 3.

5 The product identifier information 300 (e.g., magazine, on-line guide, passive guide, interactive guide, etc.) and the location 302 (city, cable system, zip code, e-mail address, etc.) allow specific products to be customized for that user. Preferences (favorite  
10 programs 304, categories 306, etc.) may be stored for each user.

At central facility 100, each individual user's preferences may be compared against a master program guide database 102. When it is determined that  
15 a user is a magazine subscriber, that user's preferences are compared against the planned magazine contents. Central facility 100 may then use the user preference information in user preference database 104 to direct magazine production equipment 114 to print  
20 custom labels for the user's program guide magazine, referring the user (i.e., the subscriber to the magazine) to specific pages in the magazine to find more information, such as information on programs that may be of interest to the user. The custom labels may  
25 be sent to the user along with the weekly issue of the program guide magazine or may be sent to the user separately. Magazine production equipment 114 includes equipment for printing magazines with program guides, as well as custom labels and custom pages for  
30 magazines.

FIG. 4 illustrates a custom mailing label for a program guide magazine. The unique code in the upper right may be used to identify the user and allow easy coordination with other products. The textual



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references on the label to specific programs and articles in the program guide magazine are based on the preferences selected by the user via the on-line guide, the interactive television program guide, the mail data  
5 collection system, or the telephone data collection system. For example, the user may have indicated that a favorite program is Star Trek, a favorite actor is Burt Reynolds, a favorite channel is ESPN, and a favorite category is kids' programs. The system may  
10 perform a search through the weekly program guide listings of program guide database 102 using these preferences (which may be stored in user preference database 104) to determine if and when items relating to the user's indicated preferences or settings appear  
15 in the program guide magazine. The items may be specific programs, or they may be articles, reviews, highlights, advertisements, or other items in the magazine related to the selected programs, categories, etc. A brief description of these items and  
20 corresponding page numbers may be placed on the custom label so that the user does not need to search through the magazine to find them.

Advertisements may be stored in program guide database 102 or separately in advertisement database  
25 101. The user preference data stored in database 104 may be compared against advertisements in advertisement database 101 to select targeted advertisements that are specific to a user's preferences and therefore more likely to be effective.

30 Each item in the magazine may have a list of attributes. This may include program titles, actors, program categories, channels, and other attributes. Each item may also have a personalization priority. For example, articles, reviews, and highlights may have

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a high priority. Ads and weekly programs may have a medium priority. Daily shows may have a low priority. Because there is limited space available on a typical mailing label, only a relatively small number of items  
5 are typically referenced. For example, there may not be a reference to the Star Trek Television program on every day. There may not be a reference to the Burt Reynolds movie shown three times during the week, but there may be a reference to an interview with Burt  
10 Reynolds as shown in FIG. 4. Magazine production equipment 114 may be used to print the magazine page number so that the user can turn directly to the listing. Custom mailing label 400 may be placed on the front cover of the user's copy of the next issue of the  
15 program guide magazine by magazine production equipment 114 before the magazine is sent to the user.

The system may search for programs on the user's favorite channels that would be of interest, for example, to a resident living in the user's  
20 geographical area. In the example of FIG. 4, the system located a Rockies game on ESPN that is described on page 22 of the program guide magazine. The system assumed that the user might be interested in a Rockies game because the user in this example lives in Denver,  
25 the Rockies are a Denver-based team, and the user chose ESPN as a favorite channel. The label 400 may refer the user to a sports highlight page if it includes a highlight of the Rockies game on ESPN, may refer the user to a printed program listing for the day and time  
30 the game will air on ESPN, or may refer the user to any other related material in the printed program guide. In the example of FIG. 4, the system also located a kids' recommendations section on page 12 of the printed guide and placed information on this section on the

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label, because the user's preferences indicated an interest in kids' programs.

Other methods of personalizing a magazine may be used. For example, a single custom page may be printed as part of the magazine and delivered to the user with the program guide magazine. An example of a custom magazine page is shown in FIG. 6 as custom page 600. Custom page 600 allows more references to items, such as daily programs, than can fit on a custom label. Custom page 600 provides guide listing 606 customized to the user's preferences for prime time programming on Tuesday, July 20, 1999. A custom page may be printed for each day of the week and sent to the user with his weekly program guide magazine subscription.

The user's preferences in the example of FIG. 6 are as follows: favorite actor, Burt Reynolds; favorite program, Star Trek; favorite channel, ESPN; and favorite category, kids' programs. If desired, the user may have more than one favorite actor, favorite channel, favorite program, and favorite category. Custom page 600 includes custom television program guide listings 606 for programs that match the user's preferences and that are airing at 8:00 p.m. on Tuesday July 20, 1999. The television program listings are organized in a grid. The times for the grid are shown in row 602. The channels for the grid are shown in column 604.

A custom page allows some items to be incorporated completely (such detailed program descriptions) or at least allows a more detailed item than would usually be possible on a label. For example, custom page 600 has a detailed program description of the movie Boogie Nights starring Burt Reynolds in region 608.

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Targeted advertisements may be incorporated onto the printed guide on a custom page such as custom page 600. Page 600 of FIG. 6 contains an illustrative targeted advertisement 610 that was selected based on the user's preferences. Advertisement 610 has been targeted to the user Jason Smith based on his interest in ESPN, which is sports-related channel, and the fact that he lives in Los Angeles. The user's name and address may be printed on each custom page in region 612 as shown in FIG. 6. If desired, other pages or portions of the printed program guide may be customized based on the user's preferences. A completely custom magazine may even be printed based on the user's preferences.

Central facility 100 may also transmit customized program guide data to the user through the Internet. For example, if the user has indicated (using a screen such as screen 200 or other interface) that he has an e-mail address, central facility 100 may send the user informational e-mail messages with information that is related to his television program preferences. E-mail message 500 shown in FIG. 5 is an example of such an e-mail message. E-mail 500 is a message to the user that highlights items of potential interest to the user. The items may be selected by the system from program guide database 102 based upon the user's indicated preferences. For example, the system may notify the user that his favorite movie "The Last Starfighter" airs on Wed. 6/14 @ 8pm on Superstation TBS. E-mail message 500 may also contain links in the e-mail message to web pages in the on-line program guide that the user can access from his user personal computer 124 (i.e., if e-mail message 500 was sent to personal computer 124) or television equipment device

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126 (i.e., if e-mail message 500 was sent to television equipment device 126). The hypertext or web links may direct the user to a page of the on-line program guide that contains information on items of potential  
5 interest to the user. For example, message 500 may contain a link to a web page that contains a live chat with a television personality that the user likes, or to a web page that contains an article on a topic of interest to the user. If desired, such linking  
10 information may be printed on a customized label or page of a printed program guide. Customized e-mail message 500 may contain a reference to a program guide magazine as shown by reference 502 in FIG. 5.

A customized program guide web page based on  
15 the user's preferences may be supported using on-line guide equipment 112. The system may require that the user register (using, for example, a web page provided by Internet data collection equipment 110). If central facility 100 determines from the user's identity data  
20 that the user is registered through an appropriate web site in the system, the system may create a customized program guide web page that the user can access with a web browser application from user personal computer 124 or user television equipment 126. The user may  
25 transmit his identity and preference data to central facility 100 using a variety of techniques, such as through a mail-in survey, using an e-mail message, using an interactive television program guide, using an Internet web page, or over the telephone. For example,  
30 the user may participate in a survey sponsored by the printed program guide that the user submits by mail. The information from this survey on the user's preferences may be transferred to the user's interactive television program guide or on-line program

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guide. The user might also participate in a survey presented by the interactive television program guide. The user's preferences from the survey or from the settings and preferences entered by the user when using  
5 the interactive television program guide may be provided to and used by the on-line television program guide.

Web page 700 of FIG. 7 is an example of a customized web page that the system may provide for a  
10 user. The system may e-mail the URL of customized web page 700 to the user or may allow the user to access web page 700 from an access page in the on-line program guide. Web page 700 may contain information about upcoming television programs and other items that may  
15 be of interest to the user. The names of the television programs may be web links to, e.g., the home pages for each of the television programs. Web page 700 may include targeted advertising such as advertisement 702 that is based on the user's  
20 preferences as supplied to the system using one of the program guide products other than the on-line program guide.

An interactive television program guide functioning on a cable set-top box in user television  
25 equipment 126 or via guide server 116 or 118 may be similarly customized based upon user preferences from other program guide products. When central facility 100 receives a user's preference information (e.g., using mail data collection equipment 106, telephone  
30 data collection equipment 108, Internet data collection equipment 110, or on-line guide equipment 112) and it is determined that the user is a user of an interactive television program guide or a passive television program guide through guide servers 116 or 118, the

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preferences may be compared against the contents of the television program guides. Program guide information may be transmitted from program guide database 102 to interactive guide server 116 and passive guide server 118. User television equipment device 126 may then be provided with the program guide data from interactive guide server 116 or passive guide server 118 through television distribution system 122 for viewing by the user.

10               The program guide system may use the user preference information (which may be stored in user preference database 104) to customize the user's television program guide. For example, the user's interactive television program guide may display a  
15 television program guide display screen such as display screen 800 of FIG. 8 using user television equipment device 126. Screen 800 may contain a program listings grid 806 that is organized by time (shown in row 802) and channel (shown in column 804). Television programs  
20 and channels in the program guide listings that match the user's preferences may be highlighted so that the user can easily identify them. For example, in FIG. 8 the user's favorite channels such as the HISTORY channel are highlighted and placed first in the  
25 listings grid. The user's favorite programs such as Dateline NBC, Cosby, and Saturday Night Live are also highlighted.

              If the user has a preference for a particular category of programming, the television program guide  
30 may display informational block 808 indicating that a program that may be of interest to the user is showing. In FIG. 8, the user has indicated an interest in movies, so the program guide has used the user's preferences to display information for the movie

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"Buffalo 66" in block 808. If the user wishes to add additional television program preference data directly through the interactive television program guide, he may select option 810. The interactive television  
5 program guide may then display screen 200. The interactive program guide may also display a reminder message that the user has set for himself such as reminder 812. Reminder 812 also allows the user to tune to the program being reminded about by  
10 highlighting the title of the program on reminder message 812 (e.g., "Local News") displayed on the screen. If desired, the system may set reminders based on the user's preferences that have been obtained through a program guide that is separate from the  
15 interactive television program guide (e.g., an on-line guide, printed guide, etc.) or other suitable arrangement.

Other preferred items such as articles or reviews may be listed on a separate interactive  
20 television screen, with hot links, or they may be highlighted on the pages or screens they normally appear on. If desired, the interactive television program guide application may contain customized program guide listings that include only programs,  
25 articles, reviews, advertisements, and other items of interest to the user. A web browser may run as an application on the set-top box that can be launched as a hot link from the interactive television program guide. The web browser may link to a program guide web  
30 page such as page 700 that has been customized based on the user's preferences.

Information on preferences that is selected using a program guide product other than the interactive program guide may be provided to the



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interactive guide in any suitable way. For example, if the user provides information on certain preferences in an on-line guide implemented on equipment 112 of FIG. 1, those preferences may be provided to an  
5 interactive television program guide implemented on user television equipment 126 of FIG. 1 via central facility 100, interactive guide server 116, and television distribution facility 122. If desired, such preferences may be transferred directly from on-line  
10 equipment 112 to user television equipment 126 (e.g., over a telephone connection). Preference information may be transferred from on-line equipment 112 to user television equipment via central facility 100 and television distribution facility 122 without directly  
15 involving server 116. In a client-server architecture, preference information may be provided to server 116, on which a portion of the interactive program guide is implemented.

These are merely illustrative examples of  
20 suitable techniques for communicating preference information from an on-line program guide to an interactive television program guide implemented on user television equipment. Other suitable techniques may be used if desired. Moreover, these techniques may  
25 be used to convey preference information to the interactive television program guide that the user provides using any program guide product other than the interactive television program guide, such as a printed program guide or on-line program guide and using  
30 equipment such as mail data collection equipment 106, telephone data collection equipment 108, Internet data collection equipment, on-line program guide equipment 112, etc.

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A passive guide channel may be customized based on the preferences of all subscribers within the cable headend that carries the channel. If enough subscribers respond with a particular preference, it  
5 may be highlighted as part of the guide. If desired, the interactive guide may be used to collect preference information for customizing the passive program guide. The passive program guide may be customized by, for example, by overlaying text and graphics on top of the  
10 passive guide video. Such overlays may be generated locally on the user's set-top box based on preferences collected with the interactive television program guide that is implemented on the user's set-top box. If desired, this and other features of the invention may  
15 be provided by an interactive television program guide arrangement based on a client-server architecture in which the guide is implemented partially on the television equipment of a user (e.g., a set-top box) and is partially implemented on a server (e.g., a  
20 server at a cable system headend, network node, etc.)

An illustrative process for providing personalized program guide data to a user across different program guide products and different equipment is shown in FIG. 9. At step 900, the system  
25 provides the user with an opportunity to enter preference information and identity information. This opportunity may be provided to the user through using, e.g., a screen such as screen 200 of FIG. 2. Such a screen may be provided using an interactive web page on  
30 the Internet, part of an on-line program guide, an interactive television program guide display screen or other interactive television screen, a mail-in survey form, a telephone survey form, etc. The user may then enter his preference and identity information and

- 25 -

transmit it to central facility 100 or other suitable destination. At step 902, the user's preference information may be used to locate program listings and other items of interest to the user. For example, the system may use the preferences to search database 102, a program guide database maintained in server 116, a program guide database maintained on user television equipment 126, a database located on on-line guide equipment 112, a database maintained by magazine production equipment 14, or program guide databases located on more than one of these platforms, combinations of these platforms or on other suitable equipment to determine which programs and other items may be of interest to the user. At step 904, the system provides a personalized program guide to the user. The program guide may be personalized by including the program listings and items located at step 902 on a display screen, web page, table, customized page, etc. The program guide that is personalized may be implemented on a different platform than the program guide or other arrangement or product used to collect the user's preferences. For example, if the user sent in a mail-in survey form, personalized program guide information may be provided to the user in the form of an e-mail message or a personalized television program guide on his set-top box.

An illustrative process for providing targeted advertising to a user across different program guide products is shown in FIG. 10. At step 1000, the system provides the user with an opportunity to enter his preference information and identity information. This opportunity may be provided to the user, using a screen such as screen 200 of FIG. 1. As described in connection with step 900 of FIG. 9, preferences may be

- 26 -

collected using any of a variety of program guide products and platforms. At step 1002, the user's preference information may be used to select advertisements to be delivered to the user. At step  
5 1004, the system provides the targeted advertisements to the user.

The targeted advertising may be delivered using a different platform guide product than the platform or program guide product that was used to  
10 collect the preferences. For example, if the user provided his preference information to the central facility through a telephone survey, the targeted advertisement may be provided as part of a custom page or custom label sent to the user with his program guide  
15 magazine subscription. The targeted advertisements may be interactive so that the user can click on the advertisement to perform an action. For example, the user can set a reminder to watch a television program that is displayed in a targeted advertisement.  
20 Interactive targeted advertisements may be used in interactive television program guides and on-line program guides.

The foregoing is merely illustrative of the principles of this invention and various modifications  
25 can be made by those skilled in the art without departing from the scope and spirit of the invention.

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What Is Claimed Is:

1. A method for providing personalized program guide data to a user based on the user's preferences, comprising:

gathering information on the user's preferences with an interactive television program guide; and

providing personalized program guide data to the user in a printed television program guide based on the user's preferences gathered with the interactive television program guide.

2. The method defined in claim 1 further comprising providing a label on the printed television program guide that refers to certain pages in the printed television program guide that contain information on programs matching the user's preferences.

3. The method defined in claim 1 further comprising customizing the printed television program guide based upon the user's preferences.

4. The method defined in claim 3 wherein customizing the printed television program guide based upon the user's preferences further comprises printing a customized printed program guide page containing the personalized program guide data.

5. The method defined in claim 1 further comprising gathering information on the user's preferences by gathering information on which favorites

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the user set in the interactive television program guide.

6. The method defined in claim 1 further comprising gathering information on the user's preferences by gathering reminder information relating to a television program the user has set a reminder to watch in the interactive television program guide.

7. The method defined in claim 1 further comprising providing the personalized program guide data including a reminder to watch a television program to the user in the printed television program guide.

8. The method defined in claim 1 further comprising providing the personalized program guide data including targeted advertisements based upon the user's preferences to the user in the printed television program guide.

9. A method for providing personalized program guide data to a user based on the user's preferences, comprising:

gathering information on the user's preferences with an on-line television program guide;  
and

providing personalized program guide data to the user in a printed television program guide based on the user's preferences gathered with the on-line television program guide.

10. The method defined in claim 9 further comprising gathering information on the user's preferences with an on-line interactive web page.

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11. The method defined in claim 9 further comprising gathering information on the user's preferences with an Internet data collection system.

12. The method defined in claim 11 further comprising gathering information on the user's preferences through an e-mail collection system.

13. The method defined in claim 9 further comprising providing a label on the printed television program guide that refers to certain pages in the printed television program guide that contains information on programs matching the user's preferences.

14. The method defined in claim 9 further comprising customizing the printed television program guide based upon the user's preferences.

15. The method defined in claim 9 wherein customizing the printed television program guide based upon the user's preferences further comprises printing a customized printed program guide page containing the personalized program guide data.

16. The method defined in claim 9 further comprising gathering information on the user's preferences by gathering reminder information relating to a television program the user has set a reminder to watch in the on-line television program guide.

17. The method defined in claim 9 further comprising providing the personalized program guide

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data including a reminder to watch a television program to the user in the printed television program guide.

18. The method defined in claim 9 further comprising providing the personalized program guide data including targeted advertisements based upon the user's preferences to the user in the printed television program guide.

19. A method for providing personalized program guide data to a user based on the user's preferences, comprising:

gathering information on the user's preferences with a telephone data collection system; and

providing personalized program guide data to the user in a printed television program guide based on the user's preferences gathered with the telephone data collection system.

20. The method defined in claim 19 further comprising providing a label on the printed television program guide that refers to certain pages in the printed television program guide that contains information on programs matching the user's preferences.

21. The method defined in claim 19 further comprising customizing the printed television program guide based upon the user's preferences.

22. The method defined in claim 21 wherein customizing the printed television program guide based upon the user's preferences further comprises printing



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a customized printed program guide page containing the personalized program guide data.

23. The method defined in claim 19 further comprising gathering information on the user's preferences by gathering reminder information relating to a television program the user has set a reminder to watch in the telephone data collection system.

24. The method defined in claim 19 further comprising providing the personalized program guide data including a reminder to watch a television program to the user in the printed television program guide.

25. The method defined in claim 19 further comprising providing the personalized program guide data including targeted advertisements based upon the user's preferences to the user in the printed television program guide.

26. A method for providing personalized program guide data to a user based on the user's preferences, comprising:

gathering information on the user's preferences with a mail data collection system; and  
providing personalized program guide data to the user in a printed television program guide based on the user's preferences gathered with the mail data collection system.

27. The method defined in claim 26 further comprising providing a label on the printed television program guide that refers to certain pages in the printed television program guide that contains

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information on programs matching the user's preferences.

28. The method defined in claim 26 further comprising customizing the printed television program guide based upon the user's preferences.

29. The method defined in claim 28 wherein customizing the printed television program guide based upon the user's preferences further comprises printing a customized printed program guide page containing the personalized program guide data.

30. The method defined in claim 26 further comprising gathering information on the user's preferences by gathering reminder information relating to a television program the user has set a reminder to watch in the mail data collection system.

31. The method defined in claim 26 further comprising providing the personalized program guide data including a reminder to watch a television program to the user in the printed television program guide.

32. The method defined in claim 26 further comprising providing the personalized program guide data including targeted advertisements based upon the user's preferences to the user in the printed television program guide.

33. The method defined in claim 26 further comprising gathering information on the user's preferences through an e-mail data collection system.

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34. The method defined in claim 26 further comprising gathering information on the user's preferences through a postal mail data collection system.

35. A method for providing personalized program guide data to users based on the users' preferences, comprising:

gathering information on the users' preferences with a data collection system; and  
providing personalized program guide data to the users in a passive television program guide based on the user's preferences gathered with the data collection system.

36. The method defined in claim 35 further comprising providing the personalized program guide data including targeted advertisements based upon the user's preferences to the user in the passive television program guide.

37. The method defined in claim 35 further comprising gathering information on the user's preferences through an e-mail data collection system.

38. The method defined in claim 35 further comprising gathering information on the user's preferences through a postal mail data collection system.

39. The method defined in claim 35 further comprising gathering information on the user's preferences through a telephone data collection system.

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40. The method defined in claim 35 further comprising gathering information on the user's preferences through an Internet data collection system.

41. A system for providing personalized program guide data to a user in a printed television program guide, the system comprising:

user television equipment that is connected to a television distribution system and that is in communication with an interactive program guide server, the user television equipment being configured to support an interactive television program guide for gathering information on the user's preferences; and magazine production equipment configured to print the printed television program guide that contains personalized program guide data based on the user's preferences gathered with the interactive television program guide.

42. The system defined in claim 41 wherein the magazine production equipment is further configured to print a label on the printed television program guide that refers to certain pages in the printed television program guide that contain information on television programs matching the user's preferences.

43. The system defined in claim 41 wherein the magazine production equipment is further configured to customize the printed television program guide based upon the user's preferences.

44. The system defined in claim 43 wherein the magazine production equipment is further configured

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to print a customized printed program guide page containing the personalized program guide data.

45. The system defined in claim 41 wherein the user television equipment is further configured to provide the user with an opportunity to indicate favorite television programs.

46. The system defined in claim 41 wherein the user television equipment is further configured to provide the user with an opportunity to set a reminder relating to a television program in the interactive television program guide.

47. The system defined in claim 41 wherein the magazine production equipment is further configured to print a reminder to watch a television program in the printed television program guide.

48. The system defined in claim 41 wherein the magazine production equipment is further configured to print targeted advertisements based upon the user's preferences in the printed television program guide.

49. A system for providing personalized program guide data to a user in a printed television program guide, the system comprising:

a user personal computer that is in communication with on-line program guide equipment and that is configured to support an on-line television program guide for gathering information on the user's preferences; and

magazine production equipment configured to print the printed television program guide that

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contains personalized program guide data based on the user's preferences gathered with the on-line television program guide.

50. The system defined in claim 49 wherein the user personal computer is further configured to support an on-line interactive web page that gathers information on the user's preferences.

51. The system defined in claim 50 wherein the user personal computer is further configured to support an on-line interactive web page that gathers information on the user's preferences through an e-mail collection system.

52. The system defined in claim 49 wherein the magazine production equipment is further configured to print a label on the printed television program guide that refers to certain pages in the printed television program guide that contain information on television programs matching the user's preferences.

53. The system defined in claim 49 wherein the magazine production equipment is further configured to customize the printed television program guide based upon the user's preferences.

54. The system defined in claim 53 wherein the magazine production equipment is further configured to print a customized printed program guide page containing the personalized program guide data.

55. The system defined in claim 49 wherein the user personal computer is further configured to

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provide the user with an opportunity to set a reminder relating to a television program in the on-line television program guide.

56. The system defined in claim 49 wherein the magazine production equipment is further configured to print a reminder to watch a television program in the printed television program guide.

57. The system defined in claim 49 wherein the magazine production equipment is further configured to print targeted advertisements based upon the user's preferences in the printed television program guide.

58. A system for providing personalized program guide data to a user in a printed television program guide, the system comprising:

telephone data collection equipment that is in communication with a user preference database and that is configured to gather information on the user's preferences to store in the user preference database; and

magazine production equipment configured to print the printed television program guide that contains personalized program guide data based on the user's preferences in the user preference database that were gathered with the telephone data collection equipment.

59. The system defined in claim 58 wherein the magazine production equipment is further configured to print a label on the printed television program guide that refers to certain pages in the printed

- 38 -

television program guide that contain information on television programs matching the user's preferences.

60. The system defined in claim 58 wherein the magazine production equipment is further configured to customize the printed television program guide based upon the user's preferences.

61. The system defined in claim 60 wherein the magazine production equipment is further configured to print a customized printed program guide page containing the personalized program guide data.

62. The system defined in claim 58 wherein the telephone data collection equipment is further configured to provide the user with an opportunity to set a reminder relating to a television program in the printed television program guide.

63. The system defined in claim 58 wherein the magazine production equipment is further configured to print a reminder to watch a television program in the printed television program guide.

64. The system defined in claim 58 wherein the magazine production equipment is further configured to print targeted advertisements based upon the user's preferences in the printed television program guide.

65. A system for providing personalized program guide data to a user in a printed television program guide, the system comprising:

mail data collection equipment that is in communication with a user preference database and



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that is configured to gather information on the user's preferences to store in the user preference database; and

magazine production equipment configured to print the printed television program guide that contains personalized program guide data based on the user's preferences in the user preference database that were gathered with the mail data collection equipment.

66. The system defined in claim 65 wherein the magazine production equipment is further configured to print a label on the printed television program guide that refers to certain pages in the printed television program guide that contain information on television programs matching the user's preferences.

67. The system defined in claim 65 wherein the magazine production equipment is further configured to customize the printed television program guide based upon the user's preferences.

68. The system defined in claim 67 wherein the magazine production equipment is further configured to print a customized printed program guide page containing the personalized program guide data.

69. The system defined in claim 65 wherein the mail data collection equipment is further configured to provide the user with an opportunity to set a reminder relating to a television program in the printed television program guide.

70. The system defined in claim 65 wherein the magazine production equipment is further configured

- 40 -

to print a reminder to watch a television program in the printed television program guide.

71. The system defined in claim 65 wherein the magazine production equipment is further configured to print targeted advertisements based upon the user's preferences in the printed television program guide.

72. The system defined in claim 65 wherein the mail data collection equipment is further configured to gather information on the user's preferences through an e-mail data collection system.

73. The system defined in claim 65 wherein the mail data collection equipment is further configured to gather information on the user's preferences through a postal mail data collection system.

74. A system for providing personalized program guide data to users in a passive television program guide, the system comprising:

data collection equipment that is in communication with a user preference database and that is configured to gather information on the users' preferences to store in the user preference database; and

a plurality of user television equipment that are connected to a television distribution system and that are in communication with a passive program guide server, the user television equipment being configured to support a passive television program guide that displays personalized program guide data based on the users' preferences in the user preference

- 41 -

database that were gathered with the data collection equipment.

75. The system defined in claim 74 wherein the user television equipment are further configured to provide targeted advertisements based upon the users' preferences to the users in the passive television program guide.

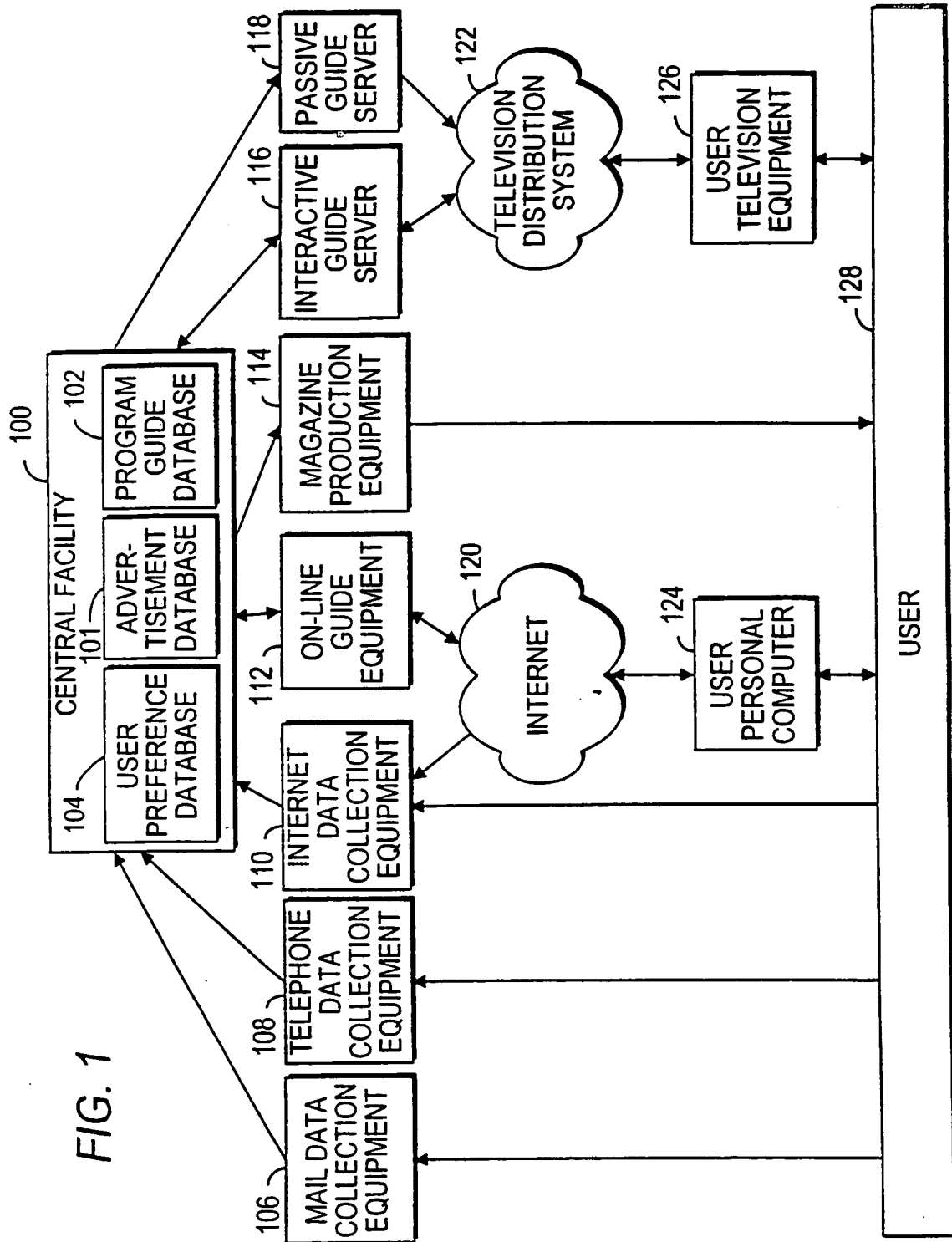
76. The system defined in claim 74 wherein the data collection equipment is further configured to gather information on the user's preferences through an e-mail data collection system.

77. The system defined in claim 74 wherein the data collection equipment is further configured to gather information on the user's preferences through a postal mail data collection system.

78. The system defined in claim 74 wherein the data collection equipment is further configured to gather information on the user's preferences through a telephone data collection system.

79. The system defined in claim 74 wherein the data collection equipment is further configured to gather information on the user's preferences through an Internet data collection system.

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200

ENTER THE FOLLOWING USER PREFERENCE INFORMATION

ENTER USER NAME <input type="text"/> 202	ENTER USER IDENTIFIER <input type="text"/> 204	PRODUCTS SUBSCRIBED TO <input type="text"/> 206
ENTER ADDRESS <input type="text"/> 208	SET A REMINDER FOR <input type="text"/> 210	ENTER FAVORITE CATEGORIES <input type="text"/> 212
ENTER FAVORITE ACTORS <input type="text"/> 214	ENTER FAVORITE CHANNELS <input type="text"/> 216	ENTER FAVORITE PROGRAMS <input type="text"/> 218
CROSS REFERENCE PROGRAM GUIDE MAGAZINE <input checked="" type="checkbox"/> 220	CROSS REFERENCE TELEVISION EQUIPMENT <input checked="" type="checkbox"/> 222	CROSS REFERENCE ON-LINE PROGRAM GUIDE <input type="checkbox"/> 224
DO NOT CROSS REFERENCE OTHER PROGRAM GUIDE PRODUCTS <input type="checkbox"/> 226		

FIG. 2

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3/10

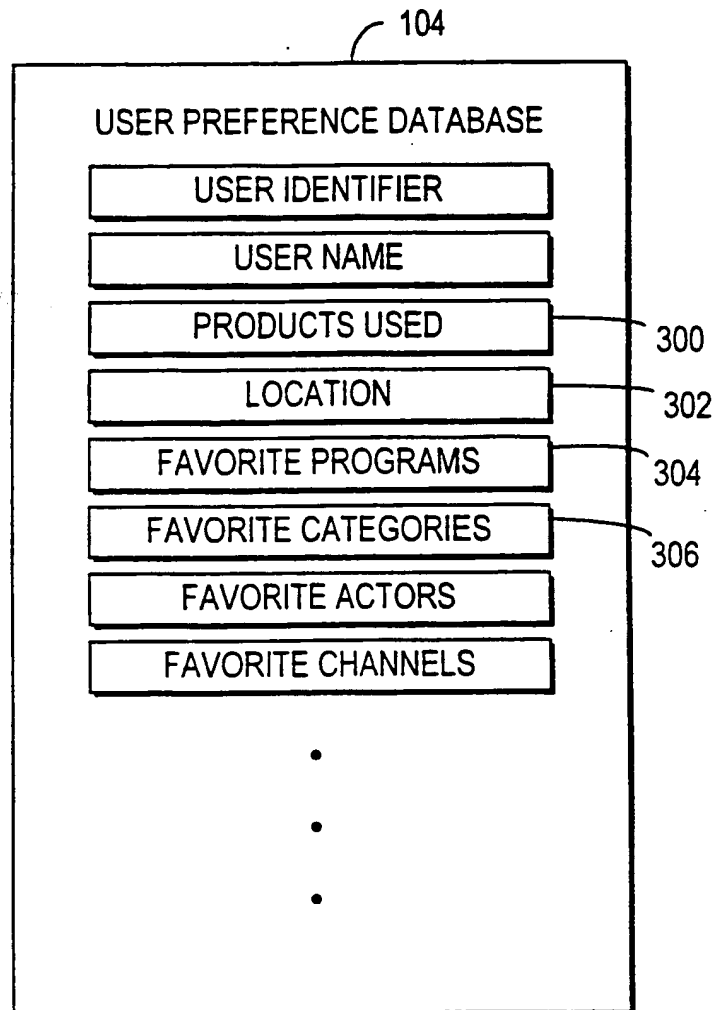


FIG. 3

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400

JEAN McPUBLIC	4831259
473 ELM ST.	
DENVER CO 80000	
BURT REYNOLDS' INTERVIEW PAGE 126!	
ROCKIES ON ESPN PAGE 22	
KIDS' RECOMMENDATIONS PAGE 12	

*FIG. 4*

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5/10

500

TO: JEAN1234@AOL.COM  
FROM: YOUR.SHOWS@TVGUIDE.COM  
SUBJECT: THIS WEEK ON TELEVISION

JEAN,

DON'T MISS THE INTERVIEW WITH BURT  
REYNOLDS AT HTTP://WWW.TVGUIDE.COM/BURT AND ON PAGE 43 OF TV GUIDE

502

THE ROCKIES ARE ON ESPN AT  
HTTP://WWW.TVGUIDE.COM/ESPN

WHAT SHOULD YOUR KIDS BE WATCHING? CHECK OUT  
HTTP://WWW.TVGUIDE.COM/KIDS

YOUR FAVORITE MOVIE "THE LAST STARFIGHTER" AIRS ON WED. 6/14 @ 8PM ON  
SUPERSTATION TBS

ALL AT HTTP://WWW.TVGUIDE.COM

FIG. 5

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6/10

600

TUESDAY JULY 20, 1999

604	8:00	8:30	9:00	9:30
ESPEN	LAKERS V. WARRIORS			
SCI FI	STAR TREK	DEEP SPACE NINE		
CARTOON CHANNEL	BUG'S BUNNY HOUR	SCOOBY DOO	SPIDERMAN	
SHOWTIME	BOOGIE NIGHTS (STARRING BURT REYNOLDS)			

608

BOOGIE NIGHTS (1997) \*\* RATED R. STARRING BURT REYNOLDS AND MARK WAHLBERG. REYNOLDS STARS AS A DIRECTOR OF ADULT FILMS IN THE LATE 1970'S. HE DISCOVERS WAHLBERG WORKING IN A NIGHT CLUB AND CASTS HIM IN SEVERAL OF HIS ADULT FILMS. WAHLBERG GAINS IMMEDIATE SUCCESS AND NOTORIETY AS A PORN STAR. CONFLICT BETWEEN THE TWO ENSUES. SEX, VIOLENCE, AND OBSCENITY.

610

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612

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FIG. 6

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700

## PERSONALIZED USER PROGRAM GUIDE WEB PAGE

JAG TUES JULY 27, CBS, 8-9PM  
"MR. RABB GOES TO WASHINGTON"  
HARM HELPS A CONGRESSWOMAN INVESTIGATE A  
JOURNALIST'S REPORT ABOUT SARIN GAS USAGE IN THE  
GULF WAR. CC, STEREO, RERUN. SERIES/DRAMA

NOVA WED JULY 28, PBS, 8-9PM  
"TREASURES OF THE SUNKEN CITY"  
AFTER EARTHQUAKES, MUCH OF EGYPT'S ANCIENT  
CITY OF ALEXANDRIA SINKS INTO THE SEA. CC,  
STEREO, RERUN. INFOTAINMENT/NATURE

702

*EYES WIDE SHUT*

STARRING TOM CRUISE AND NICOLE KIDMAN

NOW PLAYING IN A THEATER NEAR YOU

FIG. 7

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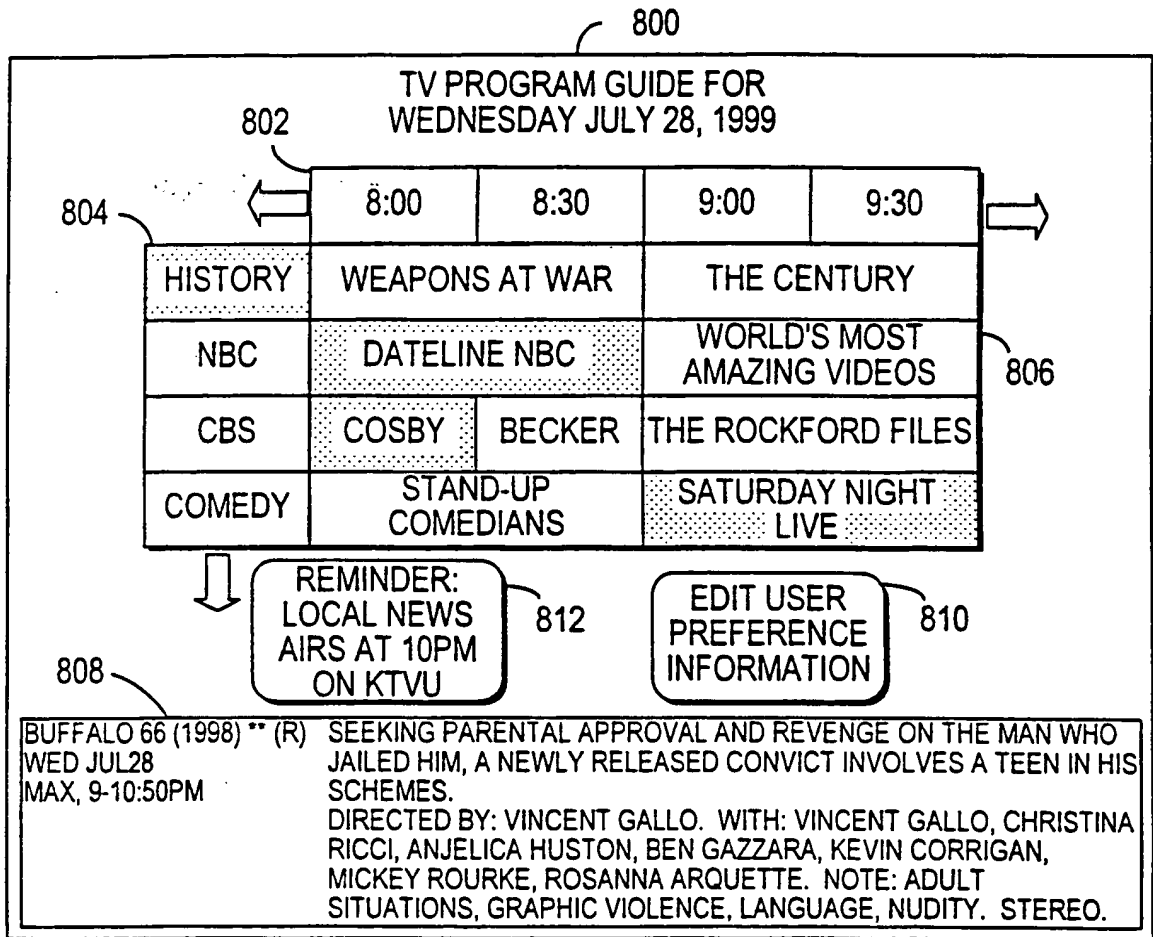


FIG. 8

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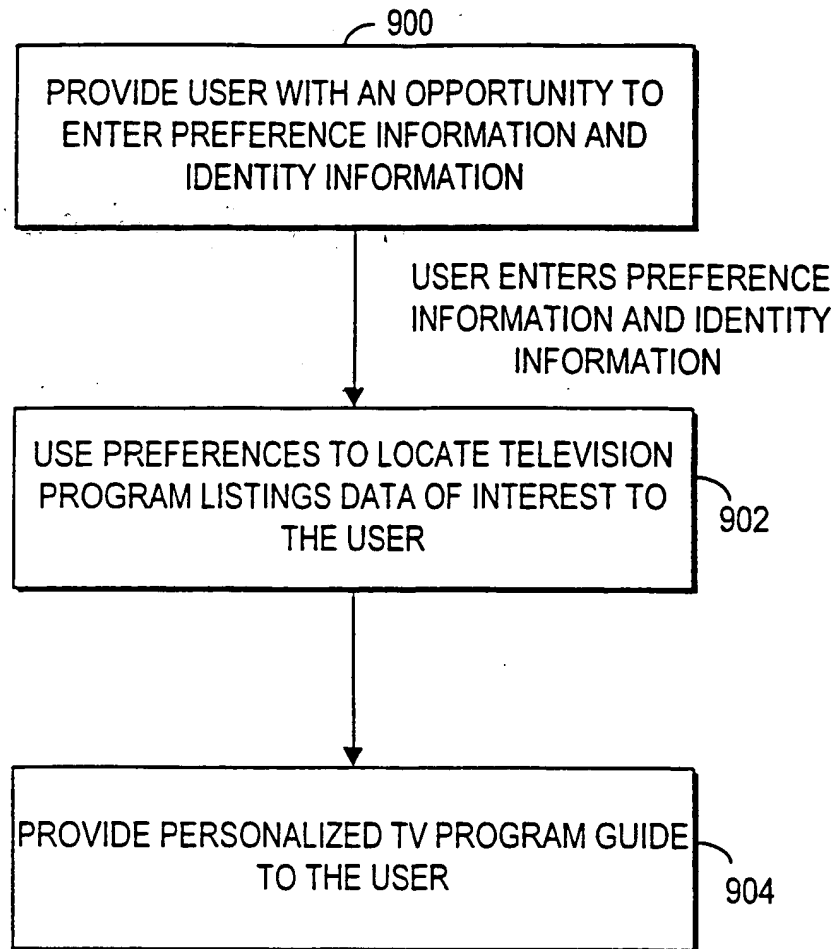


FIG. 9

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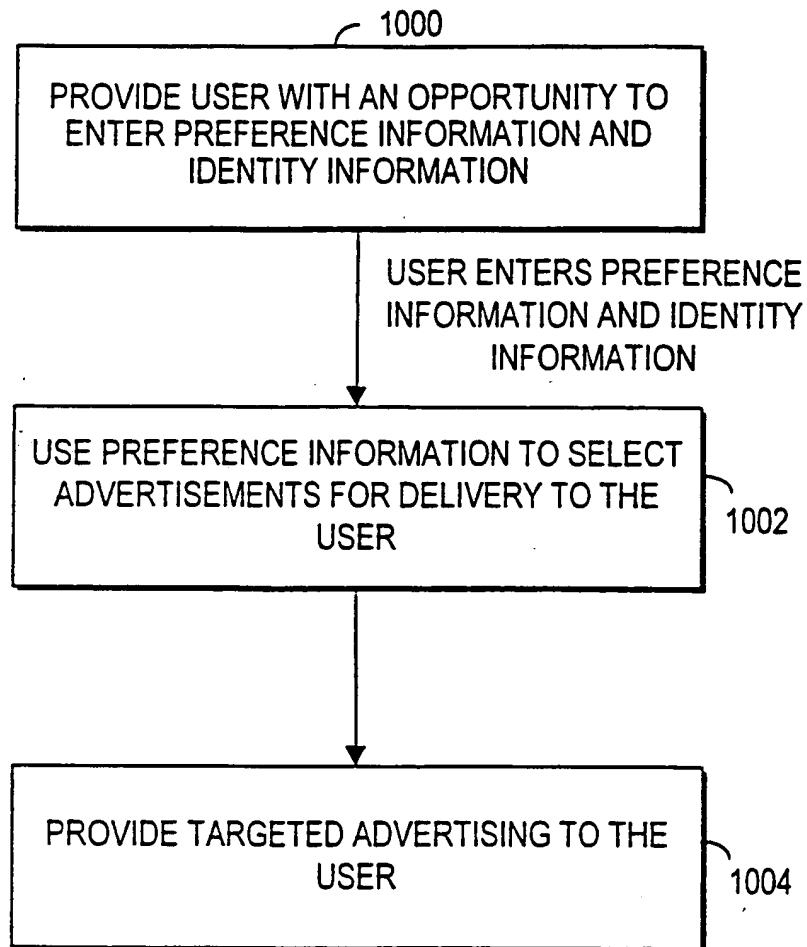


FIG. 10

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 00/17257

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 49242 A (HUNWICH KEITH ;SCHEIN STEVEN (US); ALBA THERESA (US); FOLKER DAVID) 24 December 1997 (1997-12-24)	35,74
Y	the whole document	1,9,26, 41,49,66
A		2-8, 10-25, 27-34, 36-40, 42-48, 50-65, 67-73, 75-79
	--- -/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

4 September 2000

Date of mailing of the international search report

19/09/2000

Name and mailing address of the ISA  
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NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Greve, M

# INTERNATIONAL SEARCH REPORT

Inter. Appl. No.  
PCT/US 00/17257

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 5 404 393 A (REMILLARD ROGER) 4 April 1995 (1995-04-04) column 2, line 7 - column 4, line 37	1, 19, 41, 49, 58, 66 2-18, 20-40, 42-48, 50-57, 59-65, 67-79
Y A	US 5 596 373 A (AKAIKE KAZUHIKO ET AL) 21 January 1997 (1997-01-21) the whole document	9  1-8, 10-79
Y, P A, P	WO 99 52036 A (OPEN TV INC) 14 October 1999 (1999-10-14) page 3, line 1 - page 4, line 15	26  1-25, 27-79
Y A	WO 89 09528 A (SCIENTIFIC ATLANTA) 5 October 1989 (1989-10-05) abstract	19, 58  1-18, 20-57, 59-79
A	EP 0 572 090 A (KONINKL PHILIPS ELECTRONICS NV) 1 December 1993 (1993-12-01) the whole document	1-79
A	PATENT ABSTRACTS OF JAPAN vol. 008, no. 063 (E-233), 24 March 1984 (1984-03-24) & JP 58 210776 A (NIPPON DENKI KK), 8 December 1983 (1983-12-08) abstract	1-79
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